

Appendix M

MANPRINT Issue: System Evaluation Considerations

M-1. Overview of manpower and personnel

Manpower and Personnel Integration (MANPRINT) is an engineering analysis and management process to identify and articulate requirements and constraints of human resources, human performance, and hazards to personnel to ensure the “human” is fully and continuously considered in the system design. The assessment of MANPRINT is an essential element of a system’s evaluation strategy at each decision point. The evaluation focuses on assessing the status of the system by identifying problems and recommending fixes when human performance problems degrade overall system performance. Both system design and operator/maintainer issues can be a source of MANPRINT issues. (See AR 602-2.) The MANPRINT program includes seven domains:

1. Manpower deals with the number of people in the force structure, irrespective of skill level, required to sustain operations under combat conditions and to maintain and support a system.
2. Personnel addresses the ability to provide qualified people for specific skills needed to operate, maintain, and support a system.
3. Training considers time and resources required to develop the correct skill levels.
4. Human factors engineering considers the characteristics of people (physical, cultural, mental) that must be addressed in designing a system (known as an ergonomic science, this addresses all aspects of the soldier-machine interface).
5. System safety considers the safety engineering principles and standards necessary to optimize safety within the bounds of operational effectiveness, time, and cost.
6. Health hazards consider conditions that can cause illness, disability, or reduced job performance.
7. Soldier survivability (SSv) considers fratricide, killed in action, and wounded in action prevention.

M-2. System MANPRINT Management Plan (SMMP)

The SMMP is a tailored planning and management tool that outlines and documents the MANPRINT management approach, associated decision and planning efforts, user concerns, and resolution of MANPRINT issues. As the primary issue tracking document, the SMMP is the cornerstone of the MANPRINT effort to ensure human considerations are effectively integrated into the development and acquisition of Army systems. It provides the basis for developing testable issues and criteria about human performance. The SMMP provides input to the TEMP and the SEP.

M-3. MANPRINT considerations in the evaluation strategy

The most productive, cost-effective time to find and fix human performance problems is early in the system design process, when designs or changes to designs that facilitate human and system performance can be made at the least cost.

a. With input from the lead MANPRINT domain agencies (see AR 602-2), and based on a thorough analysis of the SMMP, the system evaluator develops an effective strategy to produce valid, reliable, quantitative and qualitative data early and iteratively, which provides rapid feedback to the MATDEV’s system engineering process. It consists of a detailed front-end analysis designed to produce the most cost-effective integration of MANPRINT issues and concerns. This integrated evaluation approach will give the acquisition team a continual focus on the effects of human performance as an integral component of system performance and will leverage all data collection and analysis efforts. The goal is to resolve human performance issues before the IOT.

b. User performance of tasks critical to overall system effectiveness, suitability, and survivability can be measured in terms of the accuracy of performance and time to perform. These data provide the quantitative basis for the MANPRINT evaluation.

c. MANPRINT analysis is best practiced as an iterative, continuous feedback loop to the MATDEV throughout the design process, rather than as a decision-oriented go, no-go assessment of MANPRINT compliance provided by the system evaluator just prior to the milestone decision.